Interested in Materials?

The new **MATERIALS SCIENCE & ENGINEERING MINOR** may be for you!

**Interdisciplinary**
- Adds easily to the following majors with typically 1-3 additional courses -
  - Mechanical Engineering
  - Electrical Engineering
  - Chemistry
  - Biology
  - Physics
  - Geology

**Distinguish Yourself**
- These companies often hire materials scientists -

Catalog Link: [http://www.stthomas.edu/catalog/current/materialsscienceandengineering/](http://www.stthomas.edu/catalog/current/materialsscienceandengineering/)

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Materials Science and Engineering Interdisciplinary Minor

The Materials Science and Engineering (MSE) Minor is an interdisciplinary program that helps science and engineering students develop the knowledge and skills to properly select current materials for design and engineer future materials for advanced applications. As MSE is a broad interdisciplinary field, the program begins with a basic foundation and is then tailored by the student to overlap with their major field and highlight their materials area(s) of interest. Students learn about materials properties, structure, and processing through a variety of courses and a hands-on practicum. This minor serves those who plan to go on to graduate school in a materials-related field, as well as those entering industry who wish to gain expertise in the overlap between science and engineering.

All students must complete the following:

- PHYS 111 Classical Physics I (4 credits)
- PHYS 112 Classical Physics II (4 credits)
- Four (4) credits in thermodynamics. Choose one of
  - CHEM 331, ENGR 381, GEOL 340, PHYS 410
- ENGR 361 Engineering Materials (4 credits)
- IDSC 365 Materials Science and Engineering Practicum (0 credits)

Plus, eight (8) additional credits from approved materials-relevant course electives as listed here:

- BIOL 328 Environmental Toxicology (4 credits)
- BIOL 353 Microscopic Anatomy (4 credits)
- BIOL 361 Medical Geology (4 credits)
- BIOL 371 Cell Biology (4 credits)
- CHEM 250 Organometallic Chemistry (2 credits)
- CHEM 340 Organic Spectroscopy (2 credits)*
- CHEM 400 Advanced Inorganic Chemistry (4 credits)*
- CHEM 430 Polymer Chemistry (2 credits)*
- CHEM 487 Biomaterials (2 credits)*
- ENGR 221 Mechanics of Materials (4 credits)**
- ENGR 371 Manufacturing Processes (4 credits)**
- ENGR 381 Thermodynamics (4 credits)**
- ENGR 489 Advanced Polymer Systems (4 credits)
- ETLS 699 Topic: Technology of Thin Films (3 credits)
- ETLS 699 Topics: Composites Materials (3 credits)
- ETLS 775 Polymers in Design (3 credits)
- GEOL 211 Earth Materials (4 credits)
- GEOL 340 Fundamentals of Lithosphere I (Petrology) (4 credits)
- GEOL 360 Fundamentals of Lithosphere II (Structural Geology) (4 credits)
- PHYS 225 Applications of Modern Physics (4 credits)
- PHYS 347 Optics (4 credits)
- PHYS 410 Statistical Mechanics and Thermodynamics (4 credits)
- Or as approved by the program director

Total credits: 24

* Chemistry majors may only have one elective count towards both the CHEM major and the MSE minor.
** These courses may not be used as an elective for Mechanical Engineering majors.

*Between ENGR 361 and the eight (8) elective credits, four (4) credits must be outside the student's major field. Only four (4) elective credits may be from courses <300 level.*